

CURRICULUM VITAE

VICTOR SAMPSON

Last updated 8/31/2010

GENERAL INFORMATION

Address: School of Teacher Education
College of Education
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Professional Preparation

9/2002 – 5/2007 *Doctor of Philosophy* – Arizona State University, Tempe, AZ. Major: Curriculum and Instruction. Concentration: Science Education. Dissertation: The effects of collaboration on argumentation outcomes. Dissertation supervisors: Doug Clark (chair), Dale Baker, Sarah Brem, and James Middleton

9/1997 – 5/1999 *Master of Arts in Teaching* – Seattle University, Seattle, WA. Major: Secondary Education. Concentration: Science Education.

9/1993 – 8/1997 *Bachelor of Arts* – University of Washington, Seattle, WA. Major: Zoology.

Professional Experience

- 8/2007 – Present *Assistant Professor of Science Education* – Dual appointment in the School of Teacher Education, College of Education and the FSU-Teach program in the College of Education and the College of Arts and Sciences, Florida State University. Responsibilities include teaching graduate level courses for the School of Teacher Education and undergraduate level courses for the FSU-Teach program; conducting research and other scholarly activities; advising undergraduate and graduate students; performing service activities.
- 8/2004 – 6/2007 *Technology-Enhanced Learning in Science Graduate Research Fellow* – National Science Foundation Grant 0334199: Technology Enhanced Learning in Science (TELS). Principal Investigator: Marcia Linn, University of California at Berkeley. Responsibilities included conducting research on ways to promote and support argumentation in technology-enhanced learning environments; providing professional development for teachers.
- 8/2003 – 6/2007 *Science Teacher* – Jess Schwartz Community High School (private), Phoenix, AZ. Responsibilities included teaching secondary-level science courses (10th Grade Chemistry, 11th Grade Biology, and 12th Grade Advanced Biology); developing new science curricula; advising students.
- 6/2004 – 8/2004 *Graduate Research Assistant* – Center for Research on Education in Science, mathematics, engineering, and Technology (CRESMET) at Arizona State University, Tempe, AZ. Responsibilities included assisting with research projects (data collection, data analysis, literature reviews, and manuscript preparation) conducted by the Technology Opening Diverse Opportunities for Science (TODOS) research group.
- 1/2004 – 5/2004 *Pre-Service Teacher Supervisor* – Arizona State University, Tempe, AZ. Responsibilities included supervising student teachers for the Teacher Education for Arizona Math and Science (TEAMS) program (a partnership between ASU and Chandler Unified School District).
- 8/2003 – 8/2005 *Instructor* – Arizona State University, Tempe, AZ. Responsibilities included teaching undergraduate science education courses for the Apprentice Teacher and the Initial Teacher Certification Programs.
- 8/2002 – 6/2003 *Science Teacher* – Sandra Day O'Connor High School (public school), Deer Valley School District, Phoenix, AZ. Responsibilities included teaching secondary-level science courses (10th grade Biology) and advising students.

8/1999 – 6/2002 *Science Teacher* – Lindbergh High School (high needs public school), Renton School District, Renton, WA. Responsibilities included teaching secondary-level science courses (10th grade Biology and Advanced Biology); advising students; developing a new biology curriculum for the district; coaching basketball, tennis, and soccer.

8/1996 – 6/1997 *Teaching Assistant* – Evergreen Junior High School (suburban public school), Lake Washington School District, Redmond, WA. Responsibilities included assisting special need students in general and self-contained classrooms.

Honors and Awards

2008 The *NARST Outstanding Doctoral Dissertation Research Award*, National Association for Research in Science Teaching (NARST).

2007 The *Outstanding Teacher Award*, Jess Schwartz Community High School.

2006 *The ASU Graduate College Award: Distinguished Work in Science Education*, Division of Curriculum & Instruction and the Division of Graduate Studies, Arizona State University.

2005 Nominated for the *Outstanding Paper Award* (along with Douglas Clark), 2005 Computer Supported Collaborative Learning Conference.

2001 The Spirit of Giving Faculty Award, Lindbergh High School

Funded Fellowships

1/2007 – 5/2007 Division of Graduate Studies Dissertation Completion Fellowship, Division of Graduate Studies, Arizona State University.

8/2004 – 1/2007 *Technology-Enhanced Learning of Science (TELS) Graduate Fellowship*, TELS Research Group (University of California, Berkeley and Arizona State University).

8/2003 – 5/2004 *Interdisciplinary Ph.D. Fellowship*, Mary Lou Fulton College of Education, Arizona State University.

Membership in Professional Organizations

American Educational Research Association (AERA)
Association for Science Teacher Education (ASTE)
International Society of the Learning Sciences (ISLS)

National Association of Biology Teachers (NABT)
National Association for Research in Science Teaching (NARST)
National Science Teacher's Association (NSTA)

TEACHING

Courses Taught

Florida State University

Fall 2010 SCE 6351: Curriculum Design in Science Education
 SMT 4664: Project-Based Instruction

Summer 2010 SCE 5336: Instructional Strategies that Promote Learning in Science
 SCE 5895: The Nature of Science and Science Teaching (online)

Spring 2010 SCE 4944/5942: Student Teaching in Science Education
 SCE 4948/5331: Classroom Management in Science Education
 SCE 5140: Curriculum in Science Education
 SCE 6922/5921: Science Education Colloquium
 SCE 5910: Supervised Research – Assessment in Science Education
 SCE 5946: Supervised Teaching

Fall 2009 SCE 5332: Secondary Science Education Methods
 SCE 5147: Perspectives on Learning in Science Education
 SCE 6922/5921: Science Education Colloquium
 SCE 5905: Directed Individual Study (DIS) – Curriculum Develop.

Spring 2009 SCE 6938: Advanced Seminar in Science Education
 SCE 5935(2): Assessment & Statistics in Science Education
 SCE 6922/5921: Science Education Colloquium
 SCE 5910: Supervised Research – Argumentation in Science Ed

Fall 2008 SCE 5935(4): Making Science Concepts Stick
 SCE 4362: Teaching and Learning Science

Spring 2008 SCE 5935: Statistics for Science Teachers
 SCE 4905r: Directed Individual Study (DIS)

Fall 2007 SCE 4362/5362: Teaching & Learning Science

Summer 2007 SCE 5635 (6): Problems in Teaching Secondary School Science –
 Field lab internship (online)
 SCE 5635 (4): Problems in Teaching Secondary School Science -
 Making Science Concept Stick

Arizona State University

Summer 2005	EED 420: Elementary Science Methods and Assessment
Fall 2004	EED 420: Elementary Science Methods and Assessment
Spring 2004	EED 420: Elementary Science Methods and Assessment
Fall 2003	EED 420: Elementary Science Methods and Assessment

New Course Development

Florida State University

Fall 2009	SMT 4664: Project-Based Instruction (3)
Spring 2009	SMT 3100: Knowing and Learning in Math and Science (3)
Fall 2008	SCE 5147: Perspectives on Learning in Science Education (3) SCE 5331: Management and Planning Science Teaching (3) SCE 5332: Methods for Teaching Science in Secondary Schools (3) SCE 5336: Instructional Strategies that Promote Learning (3) SCE 5945: Initial Practicum - Teaching & Learning of Science (3) SCE 5947: Final Practicum - Teaching & Learning of Science (3)

Graduate Student Supervision

Florida State University

Chair of Doctoral Dissertation Supervisory Committees

Walker, Joi (graduation expected 5/2011)
Grooms, Jonathon (graduation expected 5/2011)
Hester, Melanie (graduation expected 5/2012)
Sanchez, Jose (graduation expected 5/2012)

Member of Doctoral Dissertation Supervisory Committees

Golden, Barry (graduation expected 5/2011)
Donmez, Oktay (graduation expected 5/2011)
Enderle, Patrick (graduation expected 5/2011)
Nzekwe, Brandon (graduation expected 5/2012)
Eales, Sarah (University of Georgia – graduation expected 5/2012)
King, Lance (graduation expected 5/2012)
Callihan, Laurie (graduation expected 5/2011)
Lee, Woon Jee (graduation expected 5/2012)

Chair of Master's Thesis Supervisory Committees

Gleim, Leeanne (graduation expected 12/2010)

Member of Master's Thesis Supervisory Committees

Kurtek, Katrina (2010). *For whom does science education reform work? Examining the effectiveness of reform-oriented instruction on mainstream and nonmainstream learners*. Unpublished Master's Thesis, The Florida State University, Tallahassee FL.

Hutner, Todd (2009). *The development and validation of the Teachers Goals for Science Education scale*. Unpublished Master's Thesis, The Florida State University, Tallahassee FL.

King, Lance (2009). *Competing discourses in science education policy: A discourse analysis of the tensions surrounding biological evolution in Florida's science standards*. Unpublished Master's Thesis, Florida State University, Tallahassee FL.

Madden, Deborah (2008). *Middle school educators' perspectives of changes in teaching practices caused by the implementation of the FCAT SCIENCE*. Unpublished Master's Thesis, Florida State University, Tallahassee FL.

Chair of Master's Portfolio Supervisory Committees

Swanson, Jon (graduation expected 12/2010)

Williams, Kiesha (graduated 8/2010)

Breman, Jacob (graduation 8/2010)

Gerbino, Francesa (graduated 5/2010)

Anderson, Brittany (graduated 5/2010)

Member of Master's Portfolio Supervisory Committees

Picotte, Katie (graduation expected 12/2010)

Pickford, Laura (graduated 5/2010)

Villa, Carlos (graduated 8/2009)

Lantz, Andrew (graduated 8/2008)

Suarez, Jennifer (graduated 8/2008)

SCHOLARLY OR CREATIVE ACTIVITIES

Publications

Refereed Journal Articles

Sampson, V., Grooms, J., & Walker, J. (in press). Argument-Driven Inquiry as a way to help students learn how to participate in scientific argumentation and craft written arguments: An exploratory study. To appear in *Science Education*.

Sampson, V., Enderle, P., Grooms, J., & Benton, A. (in press). The development and initial validation of the Beliefs About Reformed Science Teaching and Learning (BARSTL) questionnaire. To appear in *School Science and Mathematics*.

- Maguire, L., Myerowitz, L., & **Sampson, V.** (in press). Exploring osmosis and diffusion: A guided-inquiry activity for biology classes, developed through the lesson-study process. To appear in *The Science Teacher*.
- Sampson, V.** and Gerbino, F. (2010). Two instructional models that teachers can use to promote and support scientific argumentation in the biology classroom. *The American Biology Teacher*, 72(7), 427 - 431.
- Blanchard, M., Southerland, S., Osborne, J., **Sampson, V.**, Annetta, L., and Granger, E. (2010). Is inquiry possible in light of accountability? A quantitative comparison of the relative effectiveness of guided inquiry and traditional verification laboratory instruction. *Science Education*, 94(4) 577-616.
- Sampson, V.** and Grooms, J. (2010). Promoting and supporting scientific argumentation outside the lab: The generate an argument instructional model. *The Science Teacher*, 77(5), 33-37.
- Sampson, V.** and Clark, D. (2009). A comparison of the collaborative scientific argumentation practices in two high and two low performing groups. *Research in Science Education*, online first.
- Sampson, V.**, Grooms, J., and Walker, J. (2009). Argument-Driven Inquiry: A way to promote learning during laboratory activities. *The Science Teacher*, 76(7), 42-47.
- Sampson, V.** and Gleim, L. (2009). Argument-Driven Inquiry to promote the understanding of important concepts and practices in biology. *The American Biology Teacher*, 71(8), 471-477.
- Dial, K., Riddley, D., Williams, K., and **Sampson, V.** (2009). Addressing misconceptions: A demonstration to help students understand the law of conservation of mass. *The Science Teacher*, 76(7), 54-57.
- Sampson, V.** and Grooms, J. (2009). Promoting and supporting scientific argumentation in the classroom: The evaluate alternatives instructional model. *The Science Scope*, 33(1), 67-73.
- Hall, C. and **Sampson, V.** (2009). Inquiry, argumentation, and the phases of the moon: Helping students learn important concepts and practices. *The Science Scope*, 32(7), 30-35.
- Sampson, V.** and Clark, D. (2009). The impact of collaboration on the outcomes of scientific argumentation. *Science Education*, 93(3), 448-484.
- Dlugokienski, A. and **Sampson, V.** (2008). Learning to write and writing to learn in science: Refutational texts and analytical rubrics. *The Science Scope*, 32(3), 14-19.

Sampson, V. and Clark, D. (2008). Assessment of the ways students generate arguments in science education: Current perspectives and recommendations for future directions. *Science Education*, 92(3), 447-472.¹

Clark, D. and **Sampson, V.** (2008). Assessing dialogic argumentation in online environments to relate structure, grounds, and conceptual quality. *Journal of Research in Science Teaching*, 45(3), 293-321.

Clark, D., **Sampson, V.**, Weinberger, A., and Erkens, G. (2007). Analytic frameworks for assessing dialogic argumentation in online learning environments. *Educational Psychology Review*, 19(3), 343-374.

Sampson, V. and Clark, D. (2007). Incorporating scientific argumentation into inquiry-based activities with online personally-seeded discussions. *The Science Scope*, 30(6), 43-47.

Clark, D. and **Sampson, V.** (2006). Personally-seeded discussions to scaffold online argumentation. *International Journal of Science Education*, 29(3), 253-277.

Sampson, V. (2006). Two-tiered assessment. *The Science Scope*, 29(5), 46-49.

Sampson, V. (2004). The science management observation protocol. *The Science Teacher*, 71(10), 30-33.

Refereed Journal Articles in Review or in Preparation

Walker, J., **Sampson, V.**, Zimmerman, C., & Grooms, J. (accepted with minor revisions). A performance-based assessment for limiting and excess reactants. To appear in the *Journal of Chemical Education*.

Williams, K., Dial, K., and **Sampson, V.** (in review). The *Affective Elements of Science Learning* (AESL) Questionnaire. Submitted to *The Science Teacher*

Walker, J., **Sampson, V.**, & Zimmerman, C. (in review). Argument-Driven Inquiry: An introduction to a new instructional model for use in undergraduate chemistry labs. Submitted to the *Journal of Chemical Education*.

Walker, J., **Sampson, V.**, Grooms, J., Zimmerman, C., & Anderson, B. (in review). A comparative study of the impact of traditional laboratory instruction and Argument-Driven Inquiry. Submitted to the *Journal of Chemical Education*.

Walker, J., **Sampson, V.**, Grooms, J., Anderson, B., & Zimmerman, C. (in review). Argument-Driven Inquiry in undergraduate chemistry labs: The impact on students' conceptual understanding, argument skills, and attitudes towards science. Submitted to the *Journal of College Science Teaching*.

¹10th most downloaded article from *Science Education* in 2008

Sampson, V. and Blanchard, M. (in review). How do science teachers argue and what do they think about engaging students in argumentation? An empirical study of thirty secondary science teachers. Submitted to the *Journal of Research in Science Teaching*.

Sampson, V., Walker, J., Dial, K., & Swanson, J. (in preparation). Writing to learn by learning to write in science: Argument-Driven Inquiry in the undergraduate chemistry laboratory. Will be submitted to the *International Journal of Science Education*.

Sampson, V. and Walker, J. (in preparation). An evaluation of the impact of Argument-Driven Inquiry on students' science writing skills in an undergraduate chemistry laboratory course. Will be submitted to the *Journal of College Science Teaching*.

Sampson, V., Grooms, J., & Walker, J. (in preparation). Argument-Driven Inquiry and the development of the knowledge needed to engage in scientific inquiry and to describe the nature of scientific inquiry: An exploratory study. Will be submitted to the *Research in Science Education*.

Sampson, V., Smith, R., & Uysal, S. (in preparation). The impact of a modified version of *Lesson Study* on pre-service science teachers' teaching practices and beliefs about teaching and learning. Will be submitted to *Science Education*.

Hutner, T., Southerland, S., & **Sampson, V.** (in preparation). Development and validation of the teachers' goals for science education scale. Will be submitted to the *International Journal of Science and Mathematics*.

Blanchard, M., **Sampson, V.**, & Granger, E. (in preparation). A research experience for teachers: Examining the impact on teachers' inquiry conceptions and classroom practices. Will be submitted to the *International Journal of Science Education*.

Sampson, V. (in preparation). Factors that contribute to a better group and individual outcome during an episode of collaborative scientific argumentation. Will be submitted to the *Journal of Research in Science Teaching*.

Sampson, V. (in preparation). Factors that influence the convergence of explanations and evidence for group members during an episode of collaborative scientific argumentation. Will be submitted to *Science Education*.

Sampson, V. (in preparation). Idea Selection: A mechanism that can be used to explain how groups and individuals negotiate meaning during multi-voiced argumentation. Will be submitted to the *Science Education*.

Refereed Books in Preparation

Sampson, V., Schleigh, S., & Granger, E. (under contract). Teaching and learning Biology through scientific argumentation: 30 classroom activities. NSTA Press.

Refereed Book Chapters

Clark, D. B., **Sampson, V.**, Stegmann, K., Marttunen, M., Kollar, I., Janssen, J., Weinberger, A., Menekse, M., Erkens, G., and Laurinen, L. (2010). Online learning environments, scientific argumentation, and 21st century skills. In B. Ertl (Ed.), *E-Collaborative Knowledge Construction: Learning from Computer-Supported and Virtual Environments* (pp. 1 – 39). Hershey, PA: IGI Global.

Jeong, A., Clark, D., **Sampson, V.**, and Mushin M. (in press). Assessing and comparing dialogical scientific argumentation across asynchronous online discussion environments with sequential analysis. To appear in S. Puntambekar, C. Hmelo-Silver, & G. Erkens (Eds.), *Analyzing Interactions in CSCL: Methodology, approaches, and issues*. Springer.

Refereed Book Chapters in Review or in Preparation

Sampson, V., Enderle, P. and Walker J. (in review). The development and validation of the Assessment of Scientific Argumentation in the Classroom (ASAC) observation protocol: A tool for evaluating how students participate in scientific argumentation. To appear in M. Kline (Ed.), *Perspectives in Scientific Argumentation: Theory, Practice and Research*.

Clark, D., **Sampson, V.**, Chang, H.-Y., Chiu, J., Schwendimann, B., Tate, E., and Zhang, H. (in review). Research on critique and argumentation from the Technology Enhanced Learning in Science Center. To appear in M. Kline (Ed.), *Perspectives in Scientific Argumentation: Theory, Practice and Research*.

Refereed Articles in Published Conference Proceedings

Clark, D., **Sampson, V.**, Weinberger, A., and Erkens, G., (2007). Evaluating the Quality of Dialogical Argumentation in CSCL: Moving Beyond an Analysis of Formal Structure. In C. Chinn, G. Erkens, & S. Puntambekar (Eds.) *Computer-Supported Collaborative Learning: Mice, Minds, and Society. Proceedings of the Seventh International Computer Supported Collaborative Learning* (pp. 11-20). New Brunswick, NJ: ISLS.

Weinberger, A., Clark, D., Dillenbourg, P., Diziol, D., **Sampson, V.**, Stegmann, K., Rummel, N., Hong, F., Spada, H., McLaren, B., Brahm, T., and Fischer, F. (2007). Orchestrating learning activities on the social and the cognitive level to foster CSCL. In C. Chinn, G. Erkens, & S. Puntambekar (Eds.) *Computer-Supported Collaborative Learning: Mice, Minds, and Society. Proceedings of the Seventh International Computer Supported Collaborative Learning Conference* (pp 36-45). New Brunswick, NJ: ISLS.

Sampson, V. and Clark, D. (2006). Assessment of argument in science education: A critical review of the literature. In S. A. Barab, K. E. Hay, & D. T. Hickey (Eds.), *Proceedings of the Seventh International Conference of the Learning Sciences - Making a Difference* (pp. 655-661). Mahwah, NJ: Lawrence Erlbaum Associates.

Weinberger, A., Clark, D., Erkens, G., **Sampson, V.**, Stegmann, K., Fischer, F., Janssen, J., Jaspers, J., and Kanselaar, G. (2006). Argumentative knowledge construction in CSCL. In S. A. Barab, K. E. Hay, & D. T. Hickey (Eds.), *Proceedings of the Seventh International Conference of the Learning Sciences - Making a Difference* (pp. 1094-1100). Mahwah, NJ: Lawrence Erlbaum Associates

Clark, D. and **Sampson, V.** (2005). The quality of argumentation supported by personally-seeded discussions. In T. Koschmann, T. W. Chan, & D. Suthers (Eds.), *Computer Supported Collaborative Learning 2005: The Next 10 Years* (pp. 76-85). Mahwah, NJ: Lawrence Erlbaum Associates.

Refereed Papers Presented at International Events

Gleim, L., **Sampson, V.**, Hester, M., Williams, K., Sanchez, J. & Button, E. (2010, March). How middle school students and high school students evaluate the arguments found within articles written for the popular press: A comparison study. Paper presented at the *2010 Annual International Conference of the National Association of Research in Science Teaching* (NARST). Philadelphia, PA.

Walker, J., **Sampson, V.**, Grooms, J., Anderson, B., & Zimmerman, C. (2010, March). Argument-Driven Inquiry: An instructional model for use in undergraduate chemistry labs. Paper presented at the *2010 Annual International Conference of the National Association of Research in Science Teaching* (NARST). Philadelphia, PA.

Sampson, V., Walker, J., Dial, K., & Swanson, J. (2010, March). Learning to write in undergraduate chemistry: The impact of Argument-Driven Inquiry. Paper presented at the *2010 Annual International Conference of the National Association of Research in Science Teaching* (NARST). Philadelphia, PA.

Enderle, P., Walker, J., Dorgan, C., & **Sampson, V.** (2010, March). Assessment of Argumentation: An Observation Protocol. Paper presented at the *2010 Annual International Conference of the National Association of Research in Science Teaching* (NARST). Philadelphia, PA.

Hutner, T., Southerland, S., & **Sampson, V.** (2010, March). Teachers goals for education and the confluence of beliefs, the national reform documents, and accountability. Paper presented at the *2010 Annual International Conference of the National Association of Research in Science Teaching* (NARST). Philadelphia, PA.

Sampson, V. (2009, September). Argument-Driven Inquiry and the development of science proficiency in the laboratory. Paper presented at the *2009 Biannual International Meeting of the European Science Education Research Association*, Istanbul, Turkey.

- Blanchard, M.R., Southerland, S. A., Osborne, J. W., & **Sampson, V.** (2009, September). A Comparative Study of the Effectiveness of Inquiry vs. Deductive Laboratory Instruction in Middle and High School Science Classrooms. Paper presented at the *2009 Biannual International Meeting of the European Science Education Research Association*, Istanbul, Turkey.
- Sampson, V.** (2009, April). Science teachers and scientific argumentation: Trends in practice and beliefs. Paper presented at the *2009 Annual International Conference of the National Association of Research in Science Teaching (NARST)*. Garden Grove, CA.
- Grooms, J., **Sampson, V.**, and Gross, L. (2009, April). What makes a scientific argument persuasive? How middle and high school students' view different types of arguments. Paper presented at the *2009 Annual International Conference of the National Association of Research in Science Teaching (NARST)*. Garden Grove, CA.
- Hutner, T., Southerland, S. and **Sampson, V.** (2009, April). The Development and Validation of the Teachers' Goals for Science Education Scale: Moving toward understanding teachers' interpretation of policy. Paper presented at the *2009 Annual International Conference of the National Association of Research in Science Teaching (NARST)*. Garden Grove, CA.
- Sampson, V.** and Clark, D. (2008, April). The effects of collaboration on argument quality and learning. Paper presented at the *2008 Annual International Conference of the American Educational Research Association (AERA)*. New York, NY.
- Clark, D., Menekse, M., D'Angelo, C., and **Sampson, V.** (2008, April). Improving the quality of student argumentation through the initial structuring of online discussions. Paper presented at the *2008 Annual International Conference of the American Educational Research Association (AERA)*. New York, NY.
- Sampson, V.** and Grooms, J. (2008, April). Science as Argument-Driven Inquiry: The impact on students' conceptions of NOS. Paper presented at the *2009 Annual International Conference of the National Association of Research in Science Teaching (NARST)*. Baltimore, MD.
- Sampson, V.** and Clark, D. (2008, April). Differences in the ways more and less successful groups engage in argumentation: A case study. Paper presented at the *2008 Annual International Conference of the National Association of Research in Science Teaching (NARST)*. Baltimore, MD.
- Sampson, V.** and Clark, D. (2006, June). Assessment of argument in science education: A critical review of the literature. Paper presented at the *7th International Conference of the Learning Sciences (ICLS)*. Bloomington, Indiana.

Sampson, V. and Clark, D. (2006, April). The development and validation of the Nature of Science as Argument Questionnaire (NSAAQ). Paper presented at the *2006 Annual International Conference of the National Association of Research in Science Teaching (NARST)*. San Francisco, CA.

Clark, D. and **Sampson, V.** (2006, April). Characteristics of students' argumentation practices when supported by online personally-seeded discussions. Paper presented as part of the symposium, International perspectives on argumentation research in science education: Achievements, current boundaries, and next steps (D. Clark and V. Sampson, organizers and chairs), at the *2006 Annual International Conference of the National Association of Research in Science Teaching (NARST)*. San Francisco, CA.

Sampson, V. and Benton, A. (2006, January). Development and validation of the Beliefs About Reformed Science Teaching and Learning (BARSTL) questionnaire. Paper presented at the *2006 Annual Conference of the Association of Science Teacher Education (ASTE)*. Portland, OR.

Clark, D. and **Sampson, V.** (2005, June). The quality of argumentation supported by personally-seeded discussions. Paper presented at the *2005 International Conference of Computer Supported Collaborative Learning*. Taipei, Taiwan.

Clark, D. and **Sampson, V.** (2005, April). The conceptual quality of student argumentation in online discussions. Paper presented at the *2005 Annual International Conference of the National Association for Research in Science Teaching (NARST)*. Dallas, TX.

Commissioned Papers

Clark, D., **Sampson, V.**, Stegmann, K., Marttunen, M., Kollar, I., Janssen, J., Weinberger, A., Menekse, M., Erkens, G. and Laurinen, L. (2009). Scaffolding Scientific Argumentation Between Multiple Students in Online Learning Environments to Support the Development of 21st Century Skills. Paper presented at the *National Academies' Board on Science Education* workshop on Exploring the Intersection of Science Education and 21st Century Skills, Washington, D.C.

Presentations

Refereed Research Presentations or Symposia at International Events

Sampson, V. (2009, April). The impact of Argument-Driven Inquiry on three scientific practices. Presentation given as part of the symposium, *Critique to Learn in Science* (J. Shin organizer, M. Linn chair), at the annual international conference of the *National Association of Research in Science Teaching (NARST)*. Garden Grove, CA.

- Sampson, V.** (2007, July). Analytic frameworks that focus on the nature of reasoning during argumentation in CSCL environments. Presentation given as part of the symposium, *Evaluating the Quality of Dialogical Argumentation in CSCL: Moving beyond an Analysis of Formal Structure* (D. Clark and V. Sampson, organizers and chairs), at the 2007 international *Computer Supported Collaborative Learning (CSCL)* conference. New Brunswick, NJ.
- Clark, D. and **Sampson, V.** (2007, July). Fostering productive argumentation in online environments: Strategies for grouping students in discussion forums. Presentation given as part of the symposium, *Orchestrating learning activities on the social and the cognitive level to foster CSCL* (A. Weinberger, organizer and chair), at the 2007 international *Computer Supported Collaborative Learning (CSCL)* conference. New Brunswick, NJ.
- Clark, D., **Sampson, V.**, and Menekse, M. (April, 2007). Scaffolding students' debates about the implications of simulations. Presentation given as part of the symposium, *Using Technology-Mediated Visualizations to Support Chemistry Learning* (R. Kozma, Discussant and M. Linn, Chair), at the annual international conference of the *American Educational Research Association (AERA)*. Chicago, IL.
- Clark, D. and **Sampson, V.** (2006, June). Evaluating argumentation in science education: New assessment tools. Presentation given as part of the symposium, Argumentative Knowledge Construction in CSCL, at the 7th *International Conference of the Learning Sciences (ICLS)*. Bloomington, Indiana.
- Clark, D. and **Sampson, V.** (2006, April). Promoting high quality dialogical argumentation in online environments: Optimizing scaffolding for students' initial comments. Presentation given as part of the symposium, Using Computers and Online Environments to Support Argumentation (D. Clark and V. Sampson, organizers and chairs), at the annual international conference of the *American Educational Research Association (AERA)*. San Francisco, CA.
- Clark, D., **Sampson, V.**, and Lemanowski, V. (2005, April). Discourse participation in thermodynamics: Technology Opening Diverse Opportunities for Science (TODOS). Presentation given at the annual international conference of the *American Educational Research Association (AERA)*. Montreal, Canada.

Refereed Presentations and Symposia at Regional Events

- Sampson, V.** and Clark, D. (2005, November). Examining the connection between students' epistemological commitments and scientific argumentation using the NSAAQ. Presentation given at the inaugural conference of the *Southwest Consortium for Innovations in Psychology in Education (SCIPIE)*. Las Vegas, NV.

Invited Presentations and Symposia at International Events

Sampson, V. (2009, August). Promoting and supporting scientific argumentation in the classroom: The development of new instructional approaches and the assessment of student learning. Presentation given at the 1st doctoral symposium on science education at the 2009 meeting of the *European Science Education Research Association*, Istanbul, Turkey.

Invited Presentations and Symposia at National Events

Sampson, V. (2009, September). Classroom management and inquiry-based instruction: Challenges and solutions. Presentation given as part of a National Science Teacher Association (NSTA) Web Seminar on classroom management sponsored by the *NSTA New Science Teacher Academy*, Arlington, VA.

Sampson, V. (2008, September). Inquiry-based instruction and classroom management: Challenges and solutions. Presentation given as part of a National Science Teacher Association (NSTA) Web Seminar on classroom management sponsored by the *NSTA New Science Teacher Academy*, Arlington, VA.

Sampson, V. (2006, February). Collaborative knowledge construction during scientific argumentation in technology enhanced learning environments. Presentation given at the *National Science Foundation's Centers for Learning and Teaching (CLT) Principal Investigators Meeting*, Washington D.C.

Invited Presentations and Symposia at Regional Events

Sampson, V. (2010, February). Argument-Driven Inquiry: Current Research and Future Directions. Presentation given for the *Friday Institute for Educational Innovation* and the *College of Education at North Carolina State University*. Raleigh, NC.

Sampson, V. (2009, December). Science teachers and scientific argumentation: Trends in practice and beliefs. Presentation given on behalf of the *National Association of Research in Science Teaching (NARST)* at the Western Area/Regional *National Science Teachers Association (NSTA)* Meeting. Phoenix, AZ.

Gaboardi, M., and **Sampson, V.** (2009, October). Hot topics in science education. Presentation given at the *Leadership in Mathematics and Science Curriculum, Instruction, & Assessment* Statewide Conference. Jacksonville, FL.

Sampson, V. and Lanier, K. (2009, October). Advanced CPALMS. Presentation given at the *Leadership in Mathematics and Science Curriculum, Instruction, & Assessment* Statewide Conference. Jacksonville, FL.

Razzouk, R., Sheridan, D., Cornwell, S., **Sampson, V.**, and Lanier, K. (2009, October). The Florida Standards Database and CPALMS. Presentation given at the *Leadership in Mathematics and Science Curriculum, Instruction, & Assessment* Statewide Conference. Jacksonville, FL.

- Sampson, V.** (2009, September). Argument-Driven Inquiry and Science Proficiency: Current Research and Future Directions. Presentation given for the *Department of Teaching & Learning* in the *College of Education* at *The University of Iowa*. Cedar Rapids, IA.
- Sampson, V.** (2009, September). Learning from and about argumentation with Argument-Driven Inquiry. Presentation given for the FSUS Board of Directors. Tallahassee, FL.
- Sampson, V.** (2009, June). Inquiry in science education. Presentation given at the National High Magnetic Field Laboratory. Tallahassee, FL.
- Sampson, V.** (2009, June). The role of explanation and argumentation in Science. Presentation given for the Young Scholars Program at Florida State University. Tallahassee, FL.
- Sampson, V.** (2009, May). Chemistry in the Home: A new high school curriculum module developed by the Florida Department of Health (FDOH). Presentation given at Mulberry High School for Polk County Public Schools. Mulberry, FL.
- Razzouk, R., **Sampson, V.**, Sheridan, D, and Lanier, K. (2009, May). CPALMS. Presentation given at the annual meeting of the Florida Association of Science Supervisors (FASS). Orlando, FL.
- Sheridan, D. and **Sampson, V.** (2007, November). Florida Center for Research in Science, Technology, Engineering, and Mathematics (FCR-STEM) and the new Sunshine State Science Standards. Presentation given at the 39th Annual Conference of the Florida Association of District Instructional Material Administrators (FADIMA). St. Augustine, Florida.

Contracts and Grants

Contracts or Grants Authored and Funded

- 7/2010 – 6/2013 *Argument-Driven Inquiry in the Middle and High School Laboratory – The refinement and further development of a new instructional model.* Awarded \$1,062,214.00 to continue the development and refinement process of a new instructional model that will enable more students to develop science proficiency. Funded by the Institute of Education Science (U.S. Department of Education), Mathematics and Science Education Program (Award Number: R305A100909). My role: **Principal Investigator**. Co-PIs: Sherry Southerland (CoE) and Ellen Granger (CoAS).
- 7/2010 – 6/2013 *Habitat Tracker: Learning about Scientific Inquiry through Digital Journaling in Wildlife Centers.* Awarded \$1,156,500.00 to develop an intervention to foster fourth and fifth grade student understanding of

scientific inquiry and the nature of science, through student-led data collection and analysis, before, during, and after visits to a local wildlife center. Funded by the Institute of Education Science (U.S. Department of Education), Education Technology Program (Award Number: R305A100782). My role: **Co-Principal Investigator**. PI: Paul Marty (CoCI), Other Co-PIs: Sherry Southerland (CoE) and Ian Douglas (CoCI).

- 6/2009 – 5/2014 *Learning To Teach for Equity in Science and Mathematics Classrooms: The Florida State University Noyce Scholarship Program*. Awarded \$726,260.00 to help undergraduate math and science teachers learn how to teach in diverse classrooms. Funded by the National Science Foundation NOYCE Scholarship Program (Award Number: 0934702). Principal Investigator: Joe Travis (CoAS). My role: **Co-PI**. Other Co-PIs: Kathy Clark (CoE), Ellen Granger (CoAS), & Sherry Southerland (CoE).
- 5/2008 – 8/2008 *Science Teachers and Scientific Argumentation*. Funded by the FSU Council on Research and Creativity (CRC) First Year Assistant Professor (FYAP) Program. My role: **Principal Investigator**. Awarded \$16,000.00 to examine practicing science teachers' knowledge of, and ability to engage in, scientific argumentation and their beliefs about the potential value of argumentation as a pedagogical approach.
- 9/2006 – 6/2007 *Mobile Multi-Media Decision Theater*. Funded by the Salt River Project (SRP) Learning Grant Program. My role: **Principal Investigator**. Awarded \$5,000.00 to use technology as a way to promote and support argumentation in science classes at the Jess Schwartz Community High School
- 9/2001 – 6/2002 *Enhancing the Science Curriculum of Lindbergh High School through the use of Technology and Inquiry-Based Instruction*. Funded by the Boeing's "Flight to the Future" Grant Program. My role: **Principal Investigator**. Awarded \$15,000.00 to increase student involvement in science classes and improve scientific literacy at Lindbergh High School.
- 9/2000 – 6/2001 *The Lindbergh High School Teacher Leadership Project*. Funded by the Bill and Melinda Gates Foundation Grant Program. My role: **Principal Investigator**. Awarded \$10,000.00 to integrate technology into the teaching and learning of science at Lindbergh High School.
- 9/1999 – 6/2000 *Family Science Nights*. Funded by the Washington Mutual Mini-grant Program. My role: **Principal Investigator**. Awarded \$1000.00 to design and implement a program to promote parent involvement in

science education.

Work on Funded Grants

- 7/2010 – 6/2011 *STEM21id²: SySTEMic Change to implement 21st Century Instructional Design and Delivery*. Funded by the Florida Department of Education – Enhancing Education Through Technology (EETT) Program. My role: **Science Teacher Professional Development Provider**. This program was awarded \$750,000.00 to help high school science teachers in high-needs, rural Local Education Agencies (LEAs) in the big bend region acquire the technological resources and skills need to implement the Next Generation Sunshine State Standards. PI: Anthony Cooley, Panhandle Area Educational Consortium (PAEC).
- 1/2010 – 12/2013 *The Noyce Scholars Program for Mathematics Teaching at Hofstra University*. Funded by the National Science Foundation – Noyce Scholarship Program. My role: **External Evaluator**. This program was awarded \$898,976.00 to increase the number of qualified and capable new mathematics teachers teaching in New York. PI: Bliidi Stemm, Hofstra University
- 9/2008 – 1/2010 *Florida Partnership to Rejuvenate and Optimize Math and Science Education (PROMiSE)*. Funded by the Florida Department of Education Mathematics and Science Partnership – Solutions for Florida’s Future Grant Program. My role: **Science Specialist** for the Curriculum Planning and Learning Management System (CPALMS) project. Florida Promise was awarded \$8,000,000.00 to address the need to improve the mathematics and science achievement of students through professional development. PI: Gladis Kersaint, University of South Florida.

Grants Authored and Under Review

- In review *Argument-Driven Inquiry in Undergraduate Chemistry Laboratory*. The proposal requested \$244,000 to redesign and improve the General Chemistry II laboratory course at Tallahassee Community College using the Argument-Driven Inquiry instructional model. Submitted to the NSF, Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics (TUES) Program, 2011-2012. My role: **Co-Principal Investigator**. PI: Joi Walker (TCC). Other Co-PIs: Carol Zimmerman (TCC).

Grants Authored and Submitted but not Funded

- 7/2010 *Argument-Driven Inquiry in the Middle and High School Laboratory* – The refinement and further development of a new instructional model. The proposal requests \$1,046,892.00 to continue the development and refinement process of a new instructional model that will enable more students to develop science proficiency.

Submitted to the National Science Foundation DR K-12 program, 2010-2013. My role: **Principal Investigator**. Co-PIs: Sherry Southerland (CoE) and Ellen Granger (CoAS).

- 5/2010 *FSU National Writing Project*. The proposal requested \$46,000.00 to help promote and support more writing across the content areas. It was submitted to the National Writing Project, 2010-2011. My role: **Co-Principal Investigator**. PI: Susan Wood (CoE), Other Co-PIs: Shelbie Witte (CoE) and Carolyn Piazza (CoE).
- 1/2010 *FSU HHMI Undergraduate Science Education Core*. The proposal requested \$2,199,616.00 for new curriculum development, increased opportunities for undergraduate student research, and faculty development in the College of Arts and Sciences at FSU. It was submitted to the Howard Hughes Medical Institute, Undergraduate Science Education Program, 2010-2014. My role: **Co-Principal Investigator**. PI: Bryant Chase, Other Co-PIs: Jonathan Dennis (CoAS), Debra Fadool (CoAS), Elizabeth Stroup (CoAS), Steven Lenhart (CoAS), Ellen Granger (CoAS), and Sherry Southerland (CoE).
- 9/2009 *Argument-Driven Inquiry in Undergraduate Chemistry Laboratory*. The proposal requested \$250,000 to redesign and improve the General Chemistry II laboratory using the Argument-Driven Inquiry instructional model. It was submitted to NSF, Course, Curriculum, and Laboratory Improvement (CCLI) Program, 2009-2011. My role: **Principal Investigator**. Co-PIs: Kenneth Goldsby (CoAS), Joi Walker (TCC), and Carol Zimmerman (TCC).
- 7/2009 *The Big Bend Science Partnership: Learning and Teaching the Next Generation Sunshine State Science Standards in High Needs Districts*. The proposal requested \$425,000 to help middle and high school science teachers in high need LEAs develop the content knowledge and teaching skills needed to implement the Next Generation Sunshine State Standards in Science. It was submitted to the Florida Department of Education, Florida Teacher Quality Grant Program. My role: **Principal Investigator**.
- 1/2008 *Teaching and Learning Science as Argument: Fostering science proficiency with a meaningful and equitable instructional model*. The proposal requested \$450,000 to implement, study, and refine an innovative instruction model. It was submitted to the National Science Foundation, DK-12 program. My role: **Principal Investigator**. Co-PIs: Sherry Southerland (CoE) and Susan Wood (CoE).

Science Curriculum Development

Walker, J., Zimmerman, C., & **Sampson, V.** (2009). *General Chemistry 1045L*. Tallahassee Community College, Tallahassee, FL.

Sampson, V. (2009). *Chemistry in the Home: Potential Hazards and Solutions*. Developed for the Florida Department of Health (FDOH).

Clark, D. and **Sampson, V.** (2006). *Thermodynamics: Probing Your Surroundings* (Physical Science). Developed as part of the Technology-Enhanced Learning in Science (TELS) Project, National Science Foundation Grant 0334199. Available online at <http://wise.berkeley.edu>.

Clark, D., Ramirez-Marin, F., **Sampson, V.** (2005). *What about the Wolves?* (Biology). Developed as part of the Technology-Enhanced Learning in Science (TELS) Project, National Science Foundation Grant 0334199. Available online at <http://wise.berkeley.edu>.

McClellan, M., **Sampson, V.**, and Wakely, D. (2002). *Renton School District Biology Curriculum*. Renton School District, Renton, WA

Professional Development Workshops or Sessions for Science Teachers

Sampson, V. (2010). *How to use technology and reform-based instructional models such as Argument-Driven Inquiry to improve student learning in science*. Summer professional development workshop provided for the Panhandle Area Education Consortium (PAEC). Tallahassee, Florida.

Sampson, V. (2010). *How to Promote and Support Writing and Learning in the Science Classroom*. Summer professional development workshop provided for the Leon County School District. Tallahassee, Florida.

Sampson, V. (2010). *Writing and Learning in the Science Classroom: Two instructional models*. Professional development workshop provided for the Cobb Middle School Science Department (Leon County School District). Tallahassee, Florida.

Sampson, V. (2009). *How to Promote and Support Writing and Learning in the Science Classroom*. Summer professional development workshop provided for the Leon County School District. Tallahassee, Florida.

Sampson, V. (2008). *Scientific Argumentation and NOS*. Session given as part of the teacher professional development workshop "The Nature of Science" provided by Office of Science Teaching Activities (OSTA) at Florida State University. Tallahassee, Florida.

Sampson, V. (2008). *Modeling Scientific Argumentation in the Classroom*. Session given as part of the teacher professional development workshop “Communicating Science” provided by Office of Science Teaching Activities (OSTA) at Florida State University. Tallahassee, Florida.

Sampson, V. (2007). *Fostering Collaboration in Classrooms*. Teacher professional development workshop provided for the Jess Schwartz Community High School. Phoenix, Arizona.

Lemanowski, V. and **Sampson, V.** (2005). *Web-based Instruction in Science Education using WISE*. Teacher professional development workshop provided for the Dysart School District, Phoenix, Arizona.

Sampson, V. (2002). *Teaching Science through Inquiry*. Teacher professional development workshop provided for the Kent School District. Kent, Washington.

Sampson, V. and McClellan, M. (2001). *Using Modeling to Meet the Science EALRs*. Teacher professional development workshop presented at the Washington State Science Teacher Association Regional Conference. Vancouver, Washington.

Sampson, V. (2001). *Technology Integration in Student-Centered Classrooms*. Teacher professional development workshop for the Renton School District. Renton, Washington.

SERVICE

Florida State University

College of Education

11/2008 – Present Commencement Marshal

School of Teacher Education

1/2009 – Present Member, Appeals Committee

8/2009 – Present Member, FSUS Advisory Committee

FSU-Teach Program

4/2010 – 6/2010 Chair, 2010 FSU-Teach Master Teacher Search Committee

10/2009 – Present Chair, New Interdisciplinary Ph.D. Program in Mathematics and Science Education Development Project

8/2008 – Present Member, Steering Committee

2/2008 – 8/2008 Data Liaison

Science Education Program

- 8/2007 – Present Coordinator, Science Education Doctoral Program
- 10/2007 – 1/2009 Member, On Campus Masters Degree Program Revision Project

Arizona State University

University

- 8/2005 – 6/2006 Mentor, *Preparing Future Faculty Program*

Department of Curriculum and Instruction

- 5/2004 – 12/2005 Committee Member, Elementary Science Methods Curriculum Development Project

University of Washington

College of Education

- 8/2001 – 6/2002 Cooperating Teacher, Teacher Education Program

The Profession

Editorial Board Memberships

- 4/2009 – 4/2012 Member of the Editorial Board for the *Journal of Research in Science Teaching* (JRST)
- 8/2008 – 8/2010 Member of the Executive Review Board for the *American Education Research Association* (AERA) Division C, Section 4 (Science).

Guest Reviewer for Refereed Journals

- 8/2010 – Present Instructional Science (IS)
- 2/2010 – Present Eurasian Journal of Educational Research (EJER)
- 12/2009 – Present Research in Science Education (RiSE)
- 10/2007 – Present Science Education (SE)
- 6/2003 – 4/2009 Journal of Research in Science Teaching (JRST)

Service to Professional Associations

- 4/2009 – 4/2012 Member of the Outstanding Doctoral Research Award Committee for the *National Association of Research in Science Teaching* (NARST)
- 4/2009 Presider of SC-Paper Set: *Development of Critical Thinking Skills in Secondary Science*. Session held at the Annual International Conference of the National Association of Research in Science Teaching (NARST). Garden Grove, CA.
- 4/2009 Presider of SC-Paper Set: *Teaching and Learning Chemistry: Lessons*

from the Field. Session held at the Annual International Conference of the National Association of Research in Science Teaching (NARST). Garden Grove, CA.

- 5/2007 Organizer and Chair (along with Douglas Clark) of the symposium, *Evaluating the Quality of Dialogical Argumentation in CSCL: Moving beyond an Analysis of Formal Structure*. Symposium held at the 2007 Computer Supported Collaborative Learning (CSCL) conference, New Brunswick, NJ.
- 5/2006 Organizer and Chair (along with Douglas Clark) of the symposium, *Using Computers and Online Environments to Support Argumentation*. Symposium held at the Annual Conference of the American Education Research Association (AERA), San Francisco, CA.
- 5/2006 Organizer and Chair (along with Douglas Clark) of the symposium, *International perspectives on argumentation research in science education: Achievements, current boundaries, and next steps*. Symposium held at the Annual Conference of the National Association for Research in Science Teaching (NARST), San Francisco, CA.
- 4/2006 Round Table Discussion Presider of *Session 12A: Argumentation Research in Science Education*. Session held at the Annual Conference of the National Association for Research in Science Teaching (NARST), San Francisco, CA.
- 9/2005 Proposal Reviewer for the 2006 Annual Meeting of the American Educational Research Association.

The Community

- 5/2010 Science Selection Committee for the *2010 Presidential Teaching Awards*.
- 9/2008 – 5/2009 Professional development for the Lincoln High School Science Department (Leon School District).
- 10/2008 – 5/2009 Professional development for the Rickards High School Science Department (Leon School District).
- 9/2001 – 6/2002 Member of the Office of the Superintendent for Public Instruction (OSPI) Performance Assessment Development Cadre (State of Washington Office of the Superintendent for Public Instruction).

CONSULTATION

- 7/2010 – 12/2010 Development of software to teach renewable energy at the K-12 level: *BUC Technologies LLC*
- 1/2010 – 5/2010 State K-12 Science Standards Revision: *Massachusetts Department of Education*.
- 1/2010 Workshop development: Using writing to teach science. *Michigan Math Science Centers Network*.
- 11/2009 Summit on Mathematics and Science Education: “Addressing the Crisis of Mathematics and Science Achievement in Florida and the Nation.” Hosted by the Lastinger Center for Learning in the College of Education at the University of Florida.
- 9/2008 Assessment Instrument Development: Florida Teacher Competency Exam (FTCE). *Evaluation Systems of Group of Pearson*.
- 7/2008 Reviewer: PROMiSE 6-8 Science Teacher Professional Development Module. Partnership to Rejuvenate and Optimize Mathematics and Science Education in Florida (PROMiSE).
- 4/2008 Assessment Instrument Development: Florida Teacher Competency Exam (FTCE). *Evaluation Systems of Group of Pearson*.
- 4/2008 New Curriculum Development: PROMiSE Teacher Professional Development Module. Partnership to Rejuvenate and Optimize Mathematics and Science Education in Florida (PROMiSE).